nant with the name *Pacasse* written underneath it*. Judging from the general appearance of the painting, it represents a young animal, although the horns are already about as long as the head; they are of a darkish colour, with something like ridges passing transversely, commencing on the sides of the frontal ridge, turned down and outwards, with the points slightly upturned; the head is short, thick, abrupt at the nose; the forehead white; the eyes large and full, dark, with a crimson canthus; the neck maned with a dense and rough mane; the tail descending below the hough, entirely covered with dark long hair, appearing woolly; and the legs high and clumsy; but the most remarkable character appears to consist in pendulous ears" (arrant domesticity!) "nearly as long as the head. The mane and tail are dark; the head, neck, body, and limbs dark brown, excepting the pastern joints, which are white" (again domesticity!). "This figure cannot be referred to a known species, and it is sufficiently curious to merit an engraving. If it should appear to be a different animal from *Pacasse*, it may still represent a new species of buffalo"(!) "or, perhaps, of *Catoblepas*, or of *Ovis*."

The last conjecture is indubitably the right one. Unquestionably, as it appears to me, the figure represents a very extraordinary form of domestic sheep, of which, moreover, other races are represented in the same collection of drawings. Might not, by the way, the strange-looking sheep of intertropical western Africa succeed as well as goats in the Indo-Chinese and Malayan countries, where the attempt to maintain the European and Asiatic races of tame sheep is altogether hopeless?

XXV.—*On the Organization of the Worms of the Genus* Perichæta. By Edmond Perrier†.

By the kindness of M. Houllet, chief of the conservatory department of the Museum of Natural History, who has been good enough to collect them in the soil accompanying plants sent to him, I have been enabled to investigate some living worms belonging to the genus *Perichæta*, some of them coming from the West Indies, others from Calcutta.

The group of terricolous Lumbricine Annelids being but little known anatomically, I hope to be able to continue this investigation upon the other worms which may reach me by

* The notes are written by three hands, the Prince's, Marcgrave's, and Piso's. I believe that in this instance the name is written by the first.

† Translated by W. S. Dallas, F.L.S., from the 'Comptes Rendus,' July 24, 1871, tome lxxiii. pp. 277–280.

this course. Those now in question belong to a genus established by Schmarda, of which two species have recently been investigated by M. Léon Vaillant, but upon preserved specimens. Some important details which we have been fortunate enough to bring to light, allow a more exact account to be given of the organization and affinities of these worms, and to extend the results already obtained to Lumbricina belonging to other genera.

We shall especially notice here the worm from Calcutta, reserving the few differences presented by that from the West Indies for the memoir which we shall publish on this subject.

The worm in question is from 140–150 millims. (about 5½–6 inches) in length, and about 3 millims. (or ⅛ inch) in diameter. Its body contains about 106 segments, not including the head. Each segment bears in its middle a girdle of from forty-five to fifty isolated setæ, placed at equal distances apart and arranged in a circle. On the head we see a slight prominence, slightly notched in front; the *clitellum* appears after the thirteenth segment, and occupies the space of three segments, which is easily ascertained either by means of the nervous ganglia or by means of the girdles of setæ, which often persist after the formation of the clitellum. The segment which follows the clitellum is therefore the seventeenth; and it is in the lower surface of the eighteenth that the two male genital orifices are seen. The fourteenth segment, or the first of the clitellum, bears in the middle of its lower surface, but quite in front, a single orifice, which we regard as the female orifice. At the point of junction of segments 6 & 7, 7 & 8, and 8 & 9, other orifices are seen on each side of the lower surface; these are the capsuligenous glands of D'Udekem, the copulatory pouches of more recent authors.

The digestive apparatus is very complex. It consists of a pharynx with thick and glandular walls, of an œsophagus occupying the sixth, seventh, eighth, and ninth segments, of a muscular gizzard occupying the tenth segment, and, lastly, of an intestine analogous to that of the *Lumbrici*.

The walls of the pharynx are covered with glands of two kinds—the upper ones formed by two rolled-up tubes united by an intermediate substance, the lower ones containing spherical granular cæca. These glands open into the pharynx by three pairs of orifices.

Into the œsophagus there open:—

1. Three groups of glands, supported upon the partitions which separate the fifth segment from the sixth, the sixth from the seventh, and the seventh from the eighth; these glands are formed by isolated floating tubes, bent into loops,

and the two halves of which are rolled spirally round one another.

2. Two pyriform compact glands, situated in the sixth segment, formed of spherical cæca arranged in a bunch, but united by an interstitial substance.

3. Two racemose glands, with spherical, isolated cæca, the excretory canals of which, like those of the preceding glands, open at the point of junction of the œsophagus and the partition 6–7. These last glands occupy the seventh segment.

The gizzard, which is of a pearly-white colour, is remarkable for the thickness of its muscular walls. The intestine presents nothing peculiar.

The nervous system is constructed on the ordinary plan. The brain gives origin laterally to five pairs of nerves: one branch springs from the commissure; two pairs, the anterior of which is the more slender, from each of the ganglia, including that which closes the œsophageal collar. The anterior ganglia, which are short and broad, become elongated in the clitellum, and swell out again in the seventeenth, and especially in the eighteenth segment; the ganglion of this latter segment sends its anterior pair, which are very stout, to the neighbourhood of the male genital orifices.

The system of red vessels, constructed on the ordinary plan, consists of a contractile dorsal vessel and of a ventral vessel. From the ninth to the fourteenth segment, six lateral branches of unequal size unite these two principal trunks: the first are nearly cylindrical and narrow; the last two, on the contrary, which are somewhat nodose (*bosselées*) and pyriform, might be taken for cæca belonging to the ventral vessel; they are in reality united with the dorsal vessel by a small vascular tube. The intermediate branches present a form intermediate between these two extremes. Four of them appeared to us to be very distinctly contractile, as, indeed, was indicated by the interlaced muscular fibres which ran over their walls.

Behind the cincture the dorsal and ventral vessels are united by a series of anastomoses, some adhering to the intestine, others presenting a very curious arrangement. From corresponding points in the dorsal and ventral vessels there originate two slender vessels; the first, after creeping over the intestine, places itself side by side with the second, and both, ramifying parallel, bury themselves in the walls of the body, where their ultimate ramifications unite in the form of loops. These loops occur upon the ovaries, the testes, and the vibratile pavilions; they are also seen in the cephalic region, but there it was impossible to determine very distinctly the

points of departure of the vascular branches of which they are the terminations.

The male generative apparatus consists of four trilobate testes, of which the median lobe contains the youngest spermatic cells. These testes are arranged in pairs in the eleventh and twelfth segments. To each of them corresponds a vibratile funnel with very flexuous margins. The canals which form the continuation of these funnels unite two and two on each side into a slender duct, which unites with the excretory canal of a large, very deeply lobed gland situated behind the cincture. These two canals united form a third, very large one, slightly twisted, which opens externally by the so-called *male genital orifices.*

The ovaries have the appearance of a simple racemose gland, and occupy the thirteenth segment; two sessile vibratile funnels, situated on each side of the unpaired orifice of the clitellum, serve them as oviducts.

The copulatory pouches (?), to the number of three pairs, are formed by a large pedunculate pyriform sac, upon the peduncle of which is engrafted, on the same side of the partition, a long tortuous tube, the sinuosities of which are contiguous to each other, and on the other side of the partition a very small and scarcely lobate gland, presenting the same aspect as the tube. The three pairs of copulatory pouches are placed in the seventh, eighth, and ninth segments. We have indicated the position of their orifices.

It is clear that this generative apparatus belongs completely to the type of that of the Lumbricina.

XXVI.—*Description of a new Fossil* Balanus.

By Edward Parfitt.

Balanus sauntonensis, n. sp.

Shell like *B. balanoides*, but, on the average, larger, the base in full-grown specimens measuring from six to eight lines in diameter. Parietes perforated with a single row of angular pores, the divisional plates standing at various angles to the walls of the shell.

Scutum.—Tergal margin nearly straight; apex pointed; articular ridge very prominent and rounded at the apex; articular furrow strongly impressed; two deep triangular depressions in the place of the cavity usually formed for the lateral depressor muscle.

Tergum.—Apex pointed; scutellar margin slightly curved;